Allotments of these flats could not be made mainly on account of non-availability of electricity. Some flats remain vacant despite allotment due to non-fulfilment of terms and conditions of allotment by the allottees. Such flats are reallotted from time to time.

Supply of Tar Coal

4205. SHRI GORDHANBHAI JAVIA : Will the PRIME MINISTER be pleased to state :

(a) the demand and supply of tar coal in the country annully, State-wise;

(b) whether the coal tar production is sufficient to meet the requirement of the country; and

(c) if so, the steps taken by the Government to increase the production and reduce the import?

THE MINISTER OF STATE IN THE MINISTRY OF PETROLEUM AND NATURAL GAS (SHRI T. R. BAALU): (a) Tar Coal is not a petroleum product and it is not allocated to the States/UTs. However, the demand and the proposed State-wise allocation of bitumen for the year 1996-97 are given in the statement attached

(b) The bitumen production potential in the country is sufficient to meet its requirement in the country. Further steps to increase production and movement are under way.

(c) Does not arise in view of (b) above.

STATEMENT

State-Wise Annual Bitumen Supply and Demand 1996-97

States/UTs.	Demand	Proposed Allocation
1	2	3
Andman & Nicobar	3.0	3.0
Arunachal Pradesh	6.0	6.0
Assam	29.0	29.0
Bihar	108.0	108.0
Manipur	7.0	7.0
Meghalaya	8.0	8.0
Mizoram	4.0	4.0
Nagaland	2.0	2.0
Orissa	49.0	49.0
Sikkim	2.0	2.0
Tripura	5.0	5.0
West Bengal	76.0	76.0
Andhra Pradesh	110.0	110.0
Karnataka	150.0	150.0
Kerala	80.0	80.0
Pondicherry	2.5	2.5
Tamil Nadu	185.0	185.0
Dadra & N. Haveli	2.0	2.0
Daman & Diu	1.5	1.5
Goa	17.0	17.0
Gujarat	284.0	284.0
Madhya Pradesh	110.0	110.0
Maharashtra	475.0	475.0
Chandigarh	4.0	4.0
Delhi	35.0	35.0
Haryana	136.0	136.0
Himachal Pradesh	17.0	17.0
Jammu & Kashmir	20.0	20.0
Punjab	210.0	210.0
Rajasthan	300.0	195.0
Uttar Pradesh	203.0	200.0

NRDC

4206. SHRI GIRIDHAR GAMANG : Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state :

(a) whether NRDC continued to support the Technology development projects under close monitoring including Electrolytic Manganese Dioxide Project for transfer of technology;

(b) if so, since when; and

(c) the outcome of such monitoring and the assistance provided by the Government to develop indigenous technology, give details. project-wise?

THE MINISTER OF STATE OF THE MINISTRY OF PLANNING AND PROGRAMME IMPLEMENTATION AND MINISTER OF STATE OF THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI YOGINDER K. ALAGH) : (a) Yes, Sir.

(b) and (c). Salient features of the major technology development projects supported by NRDC under close monitoring during the last 10 years alongwith date of commencement of the project and its present status are given below :

(i) *Electrolytic Manganese Dioxide (EMD)*

The EMD technology was developed by National Metallurgical Laboratory (NML), Jamshedpur and assigned to NRDC for commercialisation. NRDC licensed the NML technology to M/s. Magno Mining Co. Ltd (MMCL), Hyderabad in July, 1989. MMCL configured in consultation with NRDC a 300 TPA demonstration plant for the manufacture of EMD at a cost of Rs. 4.29 crores. NRDC's equity participation in the project was to be Rs. 23.5 lakhs of which Rs. 15.67 lakhs has

been released to-date. MMCL put in equity of Rs. 67.1 lakhs and Venture Capital Fund of IDBI provided a soft loan of Rs. 338.4 lakhs at an interest of 6%. The company completed site development work at Bobbili in Andhra Pradesh, the location they selected for the plant, and also procured some of the equipment involved in the plant. This was done based on a Detailed Project Report and basic and detailed engineering of the plant undertaken by the prestigious public sector Design and Engineering Company, MECON, headquartered at Ranchi, Bihar. However, MMCL could not proceed further due to its inability to raise the rest of the finances needed for the project because by 1992 there was a steep escalation in the project cost to Rs. 10 crores. Apart from the MMCL project, NRDC and NML has also provided consultancy to the public sector Company M/s Manganese Ore India Ltd. for setting up of a 600 TPA plant for manufacture of EMD. The plant has since been commissioned and is in production.

(ii) *Disposable Polymer-based Blood Bags*

The technology for Disposal Polymer-Based Blood Bags was development by the Sree Chitra Tirunal Institute of Medical Sciences and Technology, Thiruvananthapuram under a DST-funded project.This technology was assigned to NRDC for commercialisation in 1983. NRDC licensed the technology to M/s. Peninsula Polymers Ltd. (PPL), Thiruvananthapuram in February 1984. NRDC also took out a patent in India to protect its Blood Bags technology. PPL set up a plant to manufacture 1.5 million Blood Bags per annum at a cost of Rs. 2.14 crores in 1987. NRDC's equity participation in the project (25% of the total equity) was Rs. 9.25 lakhs at that stage. However, when PPL launched commercial production and sales of its Blood Bags in early 1988. NRDC's equity participation was increased to Rs. 11.62 lakhs. When PPL came into the market in February 1988, the Blood Bags were being allowed to be imported at zero customs duty because there was no domestic production until then. What is more, international manufacturers of Blood Bags who were earlier importing the same at around Rs. 45/- per bag started dumping their bags in our market at around Rs. 10-15 per bag to undermine the production of PPL. DSIR & NRDC therefore, took expeditious action with the Ministry of Finance and as a result of their efforts, a 40% customs duty was imposed on Blood Bags. This resulted in steep rise in the sales of Blood Bags made by PPL and the Company came out of the woods. NRDC has also assisted PPL to enable it to export Blood Bags to many countries viz. U.K., Egypt, USA, Germany, Sri Lanka, Kenya and Tanzania. PPL not only achieved is full capacity of 2 million Bags per year but has also expanded its plant capacity to 3 million Bags per annum. NRDC's equity participation in the project at present is Rs. 43.75 lakhs.

NRDC has also licensed the technology to 3 more companies as indicated below:

Name of Company	Date of Licence Agreement	Annual Prod. Capacity of the plant
M/s Hindustan Latex Ltd., Thiruvanathapuram	31.1.91	3 Million Bags per annum
M/s Electro Medical & Allied Inds. Ltd. Calcutta	1.3.93	2 Million Bags per annum
M/s J. Mitra Industries Ltd., New Delhi	9.1.95	5 Million Bags per annum

NRDC has also made proposals to parties in Egypt and Indonesia for export of the complete technology for manufacture of the Blood Bags. These proposals are being actively pursued. Enquiries have also been received from South Africa and Kenya for the NRDC technology for Blood Bags.

(iii) *Rice Husk Particle Board*

The technology for the manufacture of Particle Board from Rice Husk was developed by Indian Plywood Research Institute, Bangalore in 1982 through funding from DST. It was assigned to NRDC for commercialisation in 1985. NRDC licensed the process technology to M/s Padmavathy Panel Boards Ltd. (PPBL), Bangalore in June 1988 and provided an interest free development loan of Rs. 12 lakhs for setting up a 600 TPA plant at a cost of Rs. 56 lakhs which went into production in 1990. Being a new product, the party initially had difficulty in marketing the product and thus was not able to produce to the full installed capacity (600 TPA) of the plant. The party was however successful in development of wide range of Rice Husk Boards for different applications. NRDC got the Rice Husk Particle Boards tested for its performance at Central Building

Research Institute, Roorkee. A number of parties started approaching the Corporation for acquisition of the knowhow, and the process was licensed to five more parties.

In 1994, NRDC provided financial assistance by way of equity (Rs. 16 lakhs) and loan (Rs. 16 lakhs) to M/s PPBL for expanding the production capacity of its plant from 600 TPA for production of newer variety of Rice Husk Boards. Further, NRDC obtained 3 patents on various aspects of the Rice Husk Board technology not only at home but also abroad to protect the technology. The Corporation has also set up a plant of 2500 TPA capacity in Malaysia in a record time of 8 months, which is in operation. In addition, a number of parties in China, Vietnam, Malaysia, Indonesia have approached NRDC for licencing the technology.

Keeping in view the interest of the parties abroad in the Rice Husk Board technology, DSIR under its Programme Aimed at Technological Self-Reliance (PATSER) in association with NRDC has provided financial assistance for technology development and upgradation of the existing Rice Husk Particle Board Plant to PPBL. The project is under implementation.

(iv) *Spirulina Algae*

The process for the manufacture of Spirulina Algae (High Protein Vitamin A Food Supplement) was developed by Shri A.M.M. Murugupa Chettier Research Centre, Madras and was assigned to NRDC in 1988. A 7.5 Ton per annum (TPA) pilot plant was set up in collaboration with Shri Murugappa Chettiar Research Centre, Saveriyarpuram, Tamilnadu in 1989 for which NRDC provided a development loan of Rs. 14.34 lakhs. The corporation has subsequently licensed the process to M/s. New Ambadi Estates Pvt. Ltd., Madras which has expanded the 7.5 TPA pilot plant to a capacity of 30 TPA. Additionally, M/s New Ambadi Estates Pvt. Ltd. is setting up another plant of 100 TPA capacity in the vicinity of the existing plant. MOUs have also been signed with four more parties for licensing of the knowhow viz. M/s Panbari Tea Company, M/s Yogambigia Chemicals, M/s Essar Chemical and M/s Kelvin Pharma.

Apart from promoting production capacity for Spirulina Algae, NRDC is also making efforts to get Spirulina algae introduced in the mid-day meal scheme for children and nursing mothers of the State of Tamil Nadu, Orissa etc. This supplement in the mid-day meals would enable the removal of Vitamin A and Vitamin B defficiency in children which leads to blindness. This is an important social programme and therefore it is proposed that to increase the availability of this food supplement at an affordable cost, there is a need for NRDC to promote the setting up of a State Sector Company of the Tamil Nadu Government with appropriate equity investment by NRDC for mid-day meal scheme of its state.

(v) *Flyash Bricks*

The technology was developed by Central Fuel Research Institute, Dhanbad in 1970 and assigned to NRDC for commercialisation in 1975. NRDC provided a development loan of Rs. 5 lakhs in March 1985 to M/s Jagatdhatri Brick Industries Pvt. Ltd. for setting up a plant to manufacture Flyash Bricks. When the plant went into production in June 1986, the quality of the bricks was found to be excellent and cost of production competitive with conventional bricks but the licensee was not able to increase the capacity of the plant beyond 5000 bricks per day on a two shift basis. The problem was found to be in hydraulic press, for which NRDC and CFRI assisted the licensee to rectify the defects in the hydraulic press. As a result, the licensee was able to upgrade the production capacity to 10,000 bricks per day in August 1988. Subsequently, the licensee set up a semi-commercial plant of capacity 30,000 bricks per day at a cost of Rs. 1 crore in 1989. The appropriateness of CFRI technology for manufacture of Flyash bricks was thus established and further licensed to more parties. M/s Pulver Ash Ltd., Bandel (WB) a Joint Sector Company of the Govt. of West Bengal and Pearless have set up a plant of 1,00,000 bricks per day which is in production.

(vi) *Precipitated Silica from Rice Husk Ash*

The technology was developed by IIT, Kharagpur and assigned to NRDC for commercialisation in 1986. NRDC licensed the technology to M/s. Unique Silica Pvt. Ltd., in June 1986. A development loan of Rs. 1.2 lakhs was provided by NRDC to the company in June 1990 for producing Precipitated Silica at a lower cost, making certain improvements in the process and recovering some by-products viz. Calcium Sulphate and Activated carbon from the process. The Company has started trial production.

(vii) *Artificial Heart Valve*

The technology was developed by Sree Chitra Tirunal Institute for Medical Sciences and Technology and assigned to NRDC for commercialisation in 1987. NRDC provided a development loan of Rs. 8.22 lakhs to the institute for pilot production of 300 artificial heart valves. NRDC licensed the technology to M/s TTK Pharma Ltd., Madras in April 1991 which has started marketing the Heart valve. During the year 1995-96. M/s TTK Pharma has sold 148 heart valves at Rs. 12,000/- a piece, which is around 50% of the price of the imported valve manufactured in only two countries namely USA and Italy.

(viii) *Sand Lime Bricks*

The technology was developed by Central Building Research Institute and assigned to NRDC for commercialisation. NRDC licensed the technology to M/s. Periwal Bricks Industries Ltd., in March 1992 which has set up a plant for production of 100,000 bricks per day at a cost of Rs. 5.5 crores. NRDC's equity participation in the project is Rs. 30 lakhs. Loans and equity have been extended by HUDCO and National Housing Board for the project. The plant is currently in production.

(ix) *Carbon Fibre for Braiding Applications*

The technology was developed by National Physical Laboratory and assigned to NRDC for commercialisation in 1992. NRDC has approved a development loan of Rs. 20 lakhs (Rs. 10 lakhs released so far) to M/s. Machining Centre (India) Pvt. Ltd. in March 1994 for setting up a 5 TPA semi-commercial plant at a total cost of Rs. 131 lakhs. Financial assistance to the tune of Rs. 40 lakhs is also being provided by Technology Information Forecasting and Assessment Council (TIFAC) of DST. The project is under implementaion.

(x) *Single Piece Intra Ocular Lenses (IOL)*

The technology was developed by Venu Eye Institute in 1992 and assigned to NRDC for commercialisation in 1994. NRDC has participated in the equity (to the tune of Rs. 12 lakhs) of a new company formed in November 1995 viz. M/s. Vision Surgicals Pvt. Ltd. to manufacture Single Piece IOL.

The above major cases of Technology Development and Commercialisation of significant technologies undertaken/being undertaken by NRDC under its Technology Development Programme are currently resulting in approximately Rs. 12.00 crores of annual production. What is more, this production level is expected to rise to around Rs. 50 crores by the year 2000.

NRDC receives equity & loans and grants-in-aid from DSIR for its activity relating to Development and Transfer of Technology and its Technology Promotion Programme and Invention Promotion Programme. Support to Technology Development Projects, as covered above, is extended out of equity & loans received by NRDC. Total NRDC's outlay for 8th Plan is Rs. 7 crores out of which Rs. 4.45 crores have been already given as grants during 1992-95 and the approved outlays for 1995-96 and 1996-97 are Rs. 2.81 crores and Rs. 2.06 crores respectively.

Besides supporting NRDC, other assistance provided by the three departments of Ministry of Science and Technology viz. the Department of Scientific & Industrial Research (DSIR), the Department of Science & Technology (DST) and the Department of Bio-Technology (DBT) for development and commercialisation of indigenous technology is also outlined below :

- The DSIR under its Programme Aimed at Technological Self-Reliance (PATSER) has so far approved 58 research, development, design and engineering (RDDE) projects involving a DSIR support of Rs. 18 crores out of total project cost of Rs. 44 crores. Of those projects, 51 projects are on-going involving a DSIR support of Rs. 17 crores out of total project cost of Rs. 41 crores. Some of these projects are undertaken by industrial companies on their own, while others involve collaborative work between industrial companies and public funded R & D institutions, IITs/ Universities. The DSIR funding in individual projects varies from 30% to 50% depending on the size of the project, the degree of technological and/ or commercial risk involved and linkages with other national research orgnisations. During 1994-96, the project support given by DSIR was around Rs. 10 crores while the level of support for 1996-97 is Rs. 12 crores. The projected turnovers as a result of projects nearing completion is expected to be Rs. 40 crores in 1996-97, Rs. 100 crores in 1997-98 and Rs. 150 crores in 1998-99.

- The DST through its registered society, Technology Information Forecasting and Assessment Council (TIFAC) provides Technology Development Assistance (TDA) for converting laboratory scale technologies into commercialised products and large scale applications under its scheme Home Grown Technologies (HGT). Partial assistance is provided for technology development

projects, in which industry, users and R & D institutions are partners. Besides funding industrial R & D programmes through the HGT scheme, the DST also supports projects in areas such as Development/Upgradation of Instruments, Drugs & Pharmaceuticals and Advanced Materials Development.

- The DBT provides support to Research and Development Programmes for Demonstration and Technology Transfer activities in areas related to biotechnology such as medical biotechnology, human genetics, microbial technology, biochemical engineering, bio-fertilisers diagnostic kits, tissue culture etc. There are 16 task forces and expert committees in DBT to look into the support provided by the Department for their R&D projects in the identified areas and monitor them closely. The DBT has also signed a MOU with the NRDC in October 1995 to jointly transfer DBT developed technologies to industry and also exploitation of technologies developed through DBT funded projects. Under that MOU, 10 international state-of-the-art processes developed in various R&D laboratories/universities with DBT funded have already been assigned to NRDC for commercialisation. NRDC as per its norms of practice, is undertaking a number of activities for commercialising those processes, viz. evaluating the laboratory scale process data for assessing completeness/ adequancy or commercialisation, undertaking commercial market survey to assess the size of domestic and foreign market for the bio-technology based products involved, indentifying prospective industrial partners for licencing and commercialisation of those processes and action for patenting the patentable processes both at home and abroad.

Oil Fields

4207. SHRI KESHAB MAHANTA : Will the PRIME MINISTER be pleased to state :

(a) whether the Government propose to build a pipeline network to pool gas from the oil fields of all pockets;

(b) if so, the details thereof; and

(c) if not, the reasons therefor?

THE MINISTER OF STATE IN THE MINISTRY OF PETROLEUM AND NATURAL GAS (SHRI T. R. BAALU):(a) to (c). Pipeline networks to pool gas from oil/gas fields are set up as required subject to techno-economic feasibility.

[Translation]

Nathpa Jhakri Power Project

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4208. SHRI K.D. SULTANPURI : Will the PRIME MINISTER be pleased to state :

(a) the number of such officers in Nathpa Jhakri Project against whom the allegations of corruption have been levelled;

(b) the details of total expenditure of Chairman and Managing Director of Nathpa Jhakri Project;

(c) the details of educational qualifications of these officers;

(d) the number and names of financing institutes which have financed for this project and the rate of interest charged thereon;

(e) the names of countries from which machinery has been purchased for this project;

(f) the cost thereof; and

(g) the quantum of goods being purchased per month without quotation?

THE MINISTER OF STATE IN THE MINISTRY OF POWER AND MINISTER OF STATE IN THE MINISTRY OF NON-CONVENTIONAL ENERGY SOURCES (DR. S. VENUGOPALACHARI) : (a) According to the Nathpa Jhakri Power Corporation (NJPC), there are four officers working for Nathpa Jhakri Hydroelectric Project against whom allegations of corruption have been made.

(b) An expenditure of approximately Rs. 1.26 lakhs has reportedly been incurred by NJPC on its Chairman and Managing Director on account of his salary and other perquisites for the period April, 1996 to July, 1996.

(c) Three of the four officers against whom the allegations of corruption have been made, possess a degree in Engineering while the fourth has a diploma in Civil Engineering.

(d) The names of the organisations/institutions with whom NJPC has signed the loan agreements and the rate of interest payble are given below :

Name of organisation/institution		Rate of interest payable (per annum)
1		2
1.	World Bank ($437 million) (through Government of India)	16-17%
2.	Kfw, Germany (DM 132.068 million)	6.635%